

ABSTRACT

There is provided a polymer electrolyte fuel cell capable of: sufficiently suppressing the progress of drying of the polymer electrolyte in the catalyst layers and of the polymer electrolyte membrane, and in addition, the occurrence of flooding, even if the moistened conditions of the fuel gas or the oxidant gas fed to the fuel cell change; suppressing the degradation of the anode, cathode and polymer electrolyte membrane; and thus reducing the deterioration of the cell performance readily and reliably. The polymer electrolyte fuel cell includes: a polymer electrolyte membrane; an anode and a cathode which are arranged in such a manner as to hold the polymer electrolyte membrane between them; and a pair of separators having a first gas flow path for feeding fuel gas to the anode and discharging fuel gas from the anode and a second gas flow path for feeding oxidant gas to the cathode and discharging oxidant gas from the cathode, where a notched portion is made on each of the anode and the cathode in such a position so as to allow the two notched portions to face each other, the polymer electrolyte membrane is held by the pair of separators in that position, and the polymer electrolyte membrane is supported by reinforcing members having gas permeability in the notches.